Review of Common Psychiatric Disorders: Diagnosis and Management

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Mental Status Examination

Component	Description	Examples
Appearance	Hygiene, Cooperation	Patient is poorly groomed but cooperative.
Alertness & Orientation	Person, time, place and situation	Patient is drowsy & Ox4.
Mood	Patient's description of how they're feeling	Mood is depressed.
Affect	How patient's mood appears to you.	Affect is congruent (agrees with mood)
Speech	Fluency, rate, tone, volume.	Speech is pressured and loud.
Memory –Short term & Long term	Ability to remember recent and remote facts.	Short term and long term memory appear grossly intact.
Concentration	Ability to pay attention.	Concentration is poor.
Perceptual disturbances	Hallucinations (auditory, visual, tactile, olfactory, gustatory)	Patient reports command auditory hallucinations.
Thought content	Delusions, thought broadcasting, thought insertion, thought control, specific themes (paranoid, grandiose, persecutory)	Patient was grandiose and paranoid reporting that "everyone in the room was reading his mind."
Thought process	Tight vs. loose associations, tangential, circumstantial, derailment	Patient exhibited flight of ideas.
Suicidality/Homicidality	Passive vs. active ideations, plan, intent.	Patient reports fleeting suicidal thoughts without plan or intent to harm himself.
Insight	Patient's ability to recognize their illness.	Insight is preserved.
Judgement	Patient's ability to weigh their situation and options	Patient displayed poor judgement with respect to need for treatment.

Multiaxial Assessment

Axis I - Clinical Disorders, Other Conditions That May Be a Focus of Clinical Attention.

Axis II- Personality Disorders, Mental Retardation

Axis III- General Medical Conditions

Axis IV- Psychosocial and Environmental Problems

Axis V- Global Assessment of Functioning

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Disorders of Cognition

Dementia: *chronic* state of cognitive impairment in which memory and at least one of the following (language, physical activity, social or occupational functioning) are impaired.

Delirium: *acute* state of cognitive impairment in which memory and attention are impaired.

Disorders of Cognition – Differences - 1

SYMPTOM	DEMENTIA	DELIRIUM
Course & duration	Chronic & irreversible	Acute & reversible
Memory impairment	Impaired	Impaired
Language reception	Impaired over time	+/-
Language production	Impaired over time	+/-
Alertness	Alert	Fluctuating
Emergency (medical)	No	Yes
Agitation	Variable	Variable
Causes	Degenerative (AD) Infection (HIV) Nutritional (B12) Vascular (Stroke) Substance (ETOH) Metabolic	Medications (sedatives, anticholinergic) Infection (encephalitis, UTI, HIV) Hypoxemia Hyper/Hypoglycemia Hypertension Substance (intoxication & withdrawal) Metabolic (liver) Vascular (intracranial bleeds)

Disorders of Cognition – Differences - 2

Most common causes	Alzheimer's Disease	UTI & Medications
Diagnostic work-up	Clinical impression Brain image (CT,MRI) EEG Thyroid profile Electrolytes Blood count Urinalysis B12, RBC, Folate RPR	Clinical impression Brain image (CT) EEG Electrolytes Blood count Urinalysis Tox Screen, Drug Screen RPR
Treatment	**Namenda** (memantine) **Aricept** (Donepezil) **Reminyl** (galantamine) **Exelon** (rivastigmine) **Cognex** (Tacrine) Haldol, Risperdal at Low doses Antidepressants at Low doses	Find the source and treat the underlying problem. Low dose Haldol, Risperdal.

Substance Abuse Disorders

Substance Abuse: recurrent substance use resulting in significant adverse consequences within a 12 month period (e.g. legal, health, occupational & social problems)

Substance Dependence: recurrent substance use resulting in tolerance, withdrawal, and/or compulsive drug taking behavior in addition to the adverse consequences listed for substance abuse.

Substances

	Alcohol	Cocaine	Amphetamines	Opiates
Danger in overdose	Yes	Yes	Yes	Yes
Danger in withdrawal	Yes	No	No	No
Physical dependence	Yes	No	No	Yes
Effect on body	Brain, liver	Brain, heart	Brain, heart	Brain
Effect on consciousness	Stimulant/ sedative	Stimulant	Stimulant	Sedative
Treatment in overdose	Supportive, hydration	Supportive	Supportive, Beta blocker	Naloxone
Treatment for addiction	**ReVia, Vivitrol** (naltrexone) **Antabuse** (disulfiram) **Campral** (acamprosate) Antidepressant	Supportive	Supportive	**Methadone** (Dolphine, Methadose,) **ReVia, Vivitrol** (Naltrexone) **Subutex, Suboxone** (buprenorphine)

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Schizophrenia and Psychotic Disorders - 1

Psychosis: Altered reality testing taking form of hallucinations, illusions, delusions, and/or gross disorganization.

Schizophrenia: Two or more of the following symptoms over a one month period: (delusions, hallucinations, disorganized behavior, disorganized speech, negative symptoms). Symptoms cause problems in social/occupational functioning. Overall course must be at least 6 months.

Schizophrenia and Psychotic Disorders - 2

Subtypes of schizophrenia:

1. Paranoid.
2. Disorganized
3. Catatonic
4. Undifferentiated
5. Residual

Schizophrenia and Psychotic Disorders - 3

Medications for treatment of schizophrenia and psychosis: Antipsychotics - Typical and atypical

Occurs 1 2% of world population. Inherited disorder but may be influenced by environmental factors.

Schizophrenia and Psychotic Disorders - 4

Differential diagnosis of psychotic disorders:

Schizophrenia, Schizophreniform.
Schizoaffective Disorder
Brief Psychotic Disorder
Delusional Disorder
Mood Disorder with Psychotic Features
Substance Induced Psychotic Disorder
Dementia, Delirium
Axis II pathology (schizoid, schizotypal, paranoid personality disorders).

Mood Disorders
Major Depressive Disorder

Symptoms present for at least 2 weeks nearly all the time.
Must include depressed mood OR anhedonia (loss of interest or pleasure). 5 of 9 symptoms required:

- Depressed mood.
- Anhedonia.
- Sleep disturbance.
- Guilt.
- Energy decreased.
- Concentration decreased.
- Appetite change.
- Psychomotor retardation.
- Suicidal thoughts.
- Remember: SIG E CAPS

Medications for treatment of depression:

SSRIs
Atypical antidepressants
TCAs
MAOIs

Differential diagnosis of major depression

- Dysthymic Disorder
- Bipolar I/II Disorder
- Anxiety Disorders
- Schizoaffective Disorder
- Substance Induced Mood Disorder
- Mood Disorder due to General Medical Condition
- Bereavement
- Medical Illness

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Bipolar Disorder

Bipolar I Disorder: one or more episodes of mania with/without episodes of major depression

Bipolar II Disorder: one or more episodes of hypomania with one or more episodes of major depression.

Hypomania: Period of elevated or irritable mood lasting at least 4 days accompanied by 3 or more of the following:

- Grandiosity or inflated self-esteem.
- Decreased need for sleep.
- Rapid or pressured speech.
- Flight of ideas or racing thoughts.
- Distractibility
- Increased goal-directed activity.
- Excessive involvement in pleasurable activities.

Mania: Symptoms more severe than hypomania and resulting in marked impairment in social or occupational functioning. Must last at least 7 days unless hospitalized before or psychotic symptoms are present.

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Treatments for Bipolar Disorder

Mood stabilizers: Eskalith, Eskalith CR, Lithobid, Lithane, Carbolith and Duralith (Lithium), **Depakote** (sodium divalproex), **Depakene, Depakote ER,Tegretol** (carbamazepine), **Lamictal,**(lamotrigine), **Topamax** (topiramate), **Equetro**

Cautious use of antidepressants

Atypical antipsychotics

Inherited disorder with 1-2% of world population affected. 50% of patients have comorbid substance abuse disorders.

15% lifetime suicide rate.

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Anxiety Disorders

Phobias: excessive or unreasonable fear.

Specific Phobia: fear is cued by specific objects or situations (e.g. spiders, heights, closed spaces).

Social Phobia: fear is cued by being observed by others (e.g. public speaking, eating, writing, public urination).

Agoraphobia: fear of an inability to escape situations outside the home (e.g. standing in line, traveling on a plane).

Treatment of phobias:

- Cognitive-behavioral therapy
- Antidepressants
- Benzodiazepine (with extreme caution for short periods).

Anxiety Disorders
Panic Disorder

Panic Attack: short periods of intense fear and physical discomfort reaching a peak in 10 minutes and lasting less than an hour. Includes 4 of the following:

Palpitations, sweating,trembling or shaking, shortness of breath, choking sensation, chest pain, nausea, dizziness, derealization, Fear of going crazy, fear of dying, tingling in arms or legs, chills or hot flushes

Panic Disorder = attacks occurring *without warning* and cause worry about recurrence or consequences of the attacks.

Treatment of panic disorder:

- Cognitive-behavioral psychotherapy
- Antidepressants
- Benzodiazepines (with extreme caution for short term use).

Anxiety Disorders
Obsessive-Compulsive Disorder (OCD)

Obsession: recurrent and intrusive unwanted thoughts (e.g. fear of germs).

Compulsions: repetitive actions to alleviate anxiety (e.g. hand washing).

OCD = recurrent obsessions OR compulsions which interfere with daily functioning.

Treatment of OCD

- SSRI-type antidepressants are treatment of choice.

Personality Disorders

Coded with mental retardation on Axis II
Composed of three clusters: A, B, & C
Cluster A: Paranoid, Schizoid, & Schizotypal
Cluster B: Narcissistic, Borderline, Antisocial, Histrionic
Cluster C: Avoidant, Dependent, Obsessive-Compulsive
Patients are frequently not bothered by the disorders (ego-syntonic) and they don't generally bring them to treatment. Instead, they present for treatment of other problems such as depression or anxiety which may be complicated by the presence of the personality disorders.
Treatment of personality disorders:
Difficult, many therapeutic approaches tried. DBT is a new technique.
Use medication to treat comorbid Axis I disorders (depression, anxiety, impulse control, psychosis).


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Psychiatric Emergencies
Suicide

One of the most serious problems confronting psychiatric patients.
Hospitalization: Serious consideration must be given to hospitalize suicidal patients even against their will. Most states have laws which address involuntary hospitalization.
Risk Factors: Age: elderly with smaller rise in adolescence.
Gender: male more likely to complete, female more likely to attempt.
Race: Native American, white , fewer African-Americans.
Marital Status:divorced, single, widowed
Religion: Protestant>Catholic>Jewish
chronic medical illness, previous attempts, family history of suicide
depression, substance abuse, readily available firearms
social isolation/recent stressors/recent death
Assessment of suicide attempt
Lethality: how likely method is to result in death
Intentionality: how badly patient wanted attempt to succeed.


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Psychiatric Emergencies
Homicidality and Dangerousness

Hospitalization: Serious consideration must also be given to hospitalize homicidal patients even against their will.

Tarasoff Ruling: Clinicians are required to make a good faith effort to notify intended victims of a homicidal patient. If unable to notify intended victim, then local authorities should be notified.

Treatment of aggression and agitation: Judicious use of antipsychotics and benzodiazepines may be necessary to prevent harm to patient or others.


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Eating Disorders - 1

Anorexia Nervosa: a refusal or inability to maintain weight at 85% of ideal body weight; in women, cessation of menstrual cycling is also required. Body image and control issues are prominent. Appetite is usually normal (i.e. patients are hungry but refuse to eat). Weight reduction can be achieved by decreased intake, purging, or excessive exercise.

Treatment of Anorexia Nervosa:

- Difficult, long term psychotherapy often warranted.
- May require hospitalization when medically compromised.
- Behavioral plans may be helpful.
- Fluoxetine (**Prozac**) may be helpful at high doses. Avoid bupropion.
- Appetite inducing medications do NOT work.

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Eating Disorders - 2

Bulimia Nervosa: periods of binge eating interspersed with periods of compensatory behaviors including dieting, purging, and excessive exercise. Body image distortions are also prominent. Weight is usually normal to slightly obese.

Treatment of Bulimia Nervosa:

- Antidepressant therapy (especially **Prozac**).
- Behavioral plan.
- Cannot recommend appetite suppressant therapy.
- IOP/PHP may be helpful.

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Eating Disorders - 3

Binge Eating Disorder: periods of binge eating without extreme compensatory behavior. Make up 50% of visitors to weight loss clinics. No significant body image distortions.

Treatment of Binge eating disorder:

- Similar to treatment of bulimia nervosa.

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Antianxiety Agents

Major Classes
Benzodiazepines
Antihistamines
Buspirone
Barbiturates

Antianxiety Agents
Benzodiazepines *(BZD)*

Treat: insomnia, agitation, alcohol withdrawal, seizures, amnestic/anesthetic agents during medical procedures.

BZDs have largely replaced the barbiturates due to their improved safety.

While very effective, BZDs may produce psychological and physical dependency with prolonged use.

The BZDs with the highest addiction potential are those which have: Rapid onset (Xanax, Valium) and shorter duration of action (Xanax)

Patients will occasionally "doctor shop" to get more medication than their physician intends.

Failure to taper BZDs once physical dependency occurs can result in dangerous/fatal withdrawal syndrome including trembling, anxiety, status epilepticus.

Metabolism: BZDs are all eliminated by the liver. Patient with liver problems may better tolerate lorazepam (**Ativan**) or oxazepam (**Serax**) which are more easily metabolized by the liver.

Antianxiety Agents
Benzodiazepines *(BZD)*

Lorazepam (**Ativan**) is perhaps the most versatile of the BZDs as it may be administered by various routes, has an intermediate duration of action, and is easily metabolized.

When combined with alcohol, narcotics, and/or other medication, the effect of the BZD may be additive or synergistic.

BZD with longer half-lives may accumulate and be especially troublesome for the elderly and the demented.

Overdose may be treated with flumazenil (**Mazicon**); however, this may induce withdrawal in dependent patients. Death by overdose of BZDs alone is rare but when it occurs it is by CNS depression.

BZDs are teratogenic and should not be used in pregnancy.

Antianxiety Agents Antihistamines

These medications have varied uses including: insomnia, allergic reactions, and the side affects of antipsychotics.

Because they are anticholinergic, they pose special problems for the elderly and demented.

Other prominent side effects are drowsiness, weight gain, dry mouth and nasal passages.

Commonly used antihistamines include: diphenhydramine (**Benadryl**), hydroxyzine (**Vistaril, Atarax**).

Antihistamines are not considered especially dangerous in overdose but should be avoided in pregnancy

Antianxiety Agents Buspirone (BuSpar)

An atypical antianxiety agent with a very low side affect profile.

Uses include anxiety and perhaps the reversal of SSRI induced sexual side affects.

Onset of action is delayed over several weeks in contrast to BZDs.

NOT useful for panic disorder or for insomnia.

Antimanic Agents (Mood Stabilizers)

Major Agents:

lithium (ex. **Lithobid**)

sodium divalproex (**Depakote**)

carbamazepine (**Tegretol**)

Other agents: clonazepam (**Klonopin**), gabapentin (**Neurontin**), lamotrigine (**Lamictal**), and the atypical antipsychotics (as a class).

Antimanic Agents (Mood Stabilizers) - Lithium

Along with **Depakote** (sodium divalproex) it is a first-line treatment for acute mania.
Useful as prophylactic mood stabilizer and as an antidepressant.
Also used as an adjunctive booster to other antidepressants.
Narrow therapeutic window: patients easily become toxic if dehydrated or with even small overdoses.
Multiple tests required before initiating (CBC, Chem-7, TSH, EKG, and BetaHCG).
Side affects may be severe and include tremor, weight gain, acne, polyuria, polydipsia, GI distress, hypothyroidism, leukocytosis.
Symptoms of toxicity include tremor, ataxia, slurred speech.
Category X in pregnancy due to risk of heart defects in first trimester.
Metabolism: NONE. Excreted unchanged by kidneys.
Long term use may reduce kidney function and in some lead to nephrogenic diabetes insipidus.


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Antimanic Agents Carbamazepine (Tegretol)

Second line treatment for acute mania.
Used as a prophylactic mood stabilizer, anticonvulsant, and for neuropathic pain.
Difficult to achieve stable blood levels due to autoinduction of metabolic enzymes.
Multiple tests required before initiating (CBC, Hepatic profile, BetaHCG).
Side affects nausea, GI distress, agranulocytosis, and chemical hepatitis.
One of the medications with the greatest number of drug-drug interactions due to its prominent affect on metabolic enzymes.
Category X in pregnancy due to SIGNIFICANT risk of neural tube defects such as spina bifida.
Metabolism by liver.


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Antimanic Agents Olanzapine (Zyprexa)

FDA indication for acute mania.
Weight gain, sedation, possible Type 2 diabetes and hyperlipidemia possible (Metabolic syndrome). Also, tardive dyskinesia must be addressed.
quetiapine (**Seroquel**), risperidone (**Risperdal, Risperdal Consta**), ziprasidone (**Geodon**), clozapine (**Clozaril**)


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Antipsychotic Agents
(Neuroleptics, Major Tranquilizers)

Used to treat acute psychosis (of various etiologies).
Also used to treat acute agitation, Tourette's Disorder, chronic hiccups and nausea.
All have potential to produce tardive dyskinesia. Other side affects include sedation, weight gain, reduced seizure threshold, etc.
Side affects of high potency agents may be offset by anticholinergic medications including diphenhydramine (**Benadryl**) or benztropine (**Cogentin**).
Haldol may be most versatile in that it is available in oral tablets, oral concentrate, decanoate, and short-term IM/IV formulations.
Neuroleptic Malignant Syndrome (NMS) is a potentially life-threatening complication.

Comparison of Typical Antipsychotics

	Low Potency	Medium Potency	High Potency
Examples	Chlorpromazine Thioridazine	Loxapine Perphenazine	Haloperidol Fluphenazine Thiothixene Trifluoperazine
Relative Potency	100 mg.	10 mg.	1 mg.
Anticholinergic: Dry mouth, urinary retention, delirium, constipation.	+++	++	+
Antihistaminic: Sedation, weight gain	+++	++	+
Antiadrenergic: Orthostasis	+++	++	+
Antidopaminergic: Parkinsonism, Dystonias, akathesia	+	++	+++

Antipsychotic Agents
Atypical Antipsychotics

Major agents.
Clozapine (**Clozaril)**
Risperidone (**Risperdal**)
Olanzapine (**Zyprexa**)
Quetiapine (**Seroquel**)
Ziprasidone (**Geodon**)
Aripiprazole (**Abilify**)
Advantages include lower risk of tardive dyskinesia and dystonias, ability to treat positive and negative symptoms of schizophrenia, and perhaps decreased likelihood of developing NMS.
Disadvantages include cost, oral dosing only.
Clozaril requires weekly to biweekly blood testing to ensure early detection of potential agranulocytosis. If this develops, Clozaril must be STOPPED.

Antidepressant Agents

Tricyclic Antidepressants.
Selective Serotonin Reuptake Inhibitors (SSRI).
MAO Inhibitors.
Atypical Antidepressants.

Antidepressant Agents

Tricyclic Antidepressants (TCAs)

Useful in the treatment of depression, OCD, panic disorder, neuropathic pain, migraines, insomnia.

Most commonly used TCAs are amitryptyline (**Elavil**), nortriptyline (**Pamelor**), and imipramine (**Tofranil**). clomipramin (**Anafranil**) is most commonly used for OCD.

Dangerous in toxicity with an LD50 of 2000 mg. Causes of death in toxicity include cardiac arrhythmias, status epilepticus, and respiratory depression.

50% of patients who die in overdose present with stable vital signs in the emergency room. Patient MUST be admitted and placed on cardiac telemetry until at least 48 hours AFTER drug levels have returned to normal range.

Antidepressant Agents

Selective Serotonin Reuptake Inhibitors (SSRIs) - 1

Useful in the treatment of depression, panic disorder, anxiety, OCD, bulimia, nervosa,possibly anorexia nervosa, neuropathic pain.

Agents available in the U.S. include fluoxetine (**Prozac**), paroxetine (**Paxil**), sertraline (**Zoloft**), fluvoxamine (**Luvox**), citalopram (**Celexa**), and escitalopram (**Lexapro**). Lexapro has the fewest drug-drug interactions of the SSRIs and may have fewer sexual side effects at therapeutic doses than other SSRI's.

Should **NOT** be combined with one another or with MAOIs.

Adequate clinical trial consists of 6 weeks continuous administration at recognized therapeutic doses.

Antidepressant Agents

Selective Serotonin Reuptake Inhibitors (SSRIs) - 2

Abrupt cessation can cause an unpleasant but not dangerous discontinuation syndrome.

All are pregnancy category C.

Common side affects include GI distress, headache, dizziness, delayed orgasm, decreased sexual desire. GI side affects are frequently transient and can be minimized by taking medication with meals.

Prozac has a half-life of 7-9 days compared to about 1 day or less for the other agents.

Paxil is sedating and given at night while Prozac and Zoloft are typically given in the morning. Luvox must be given twice daily and is only indicated for OCD in the U.S.

Antidepressant Agents

Monoamine Oxidase Inhibitors (MAOIs)

Useful for the treatment of depression, panic disorder, and OCD.

Most common agents include tranylcypromine (**Parnate**) and phenelzine (**Nardil**).

Patients must be maintained on a strict tyramine diet to avoid lethal accumulation of toxic metabolites. Foods to be avoided include aged cheeses, beer, wine, and smoked meats. Now in a transdermal delivery system (Emsam)

Have potentially fatal interactions with other medications including meperidine (**Demerol**), sympathomimetics (e.g. Sudafed), and SSRIs. Must wait at least 14 days after stopping an MAOI before using any of these medications.

Antidepressant Agents

Atypical Antidepressants

Agents available in the U.S. include bupropion (**Wellbutrin, Zyban**) nefazodone (**Serzone**), mirtazapine (**Remeron**), and venlafaxine (**Effexor**), and duloxetine (**Cymbalta**).

All are useful for the treatment of depression. wellbutrin, effexor, cymbalta may also be used to treat ADHD. Wellbutrin can aid in smoking cessation, and may be the preferred antidepressant in bipolar depression. Serzone and Remeron may be particularly helpful in the treatment of anxious depression. Venlafaxine is useful for the treatment of GAD.

Side affect profiles are varied. Bupropion is contraindicated in patients with a history of seizure, anorexia nervosa, or bulimia nervosa. Effexor at high doses may cause elevation of blood pressure.

Remeron may cause weight gain and sedation.

Psychostimulants/ADD Medications - 1

Useful for the treatment of ADHD, narcolepsy, and as adjunctive treatments for depression in medically compromised patients.

Commonly used agents include methylphenidate (**Ritalin**), dextroamphetamine (**Dexedrine**), and pemoline (**Cylert**).

All of the above have a high abuse potential and are carefully regulated by the FDA. Long-acting and transdermal delivery systems are safer.

Side affects include insomnia, irritability, anxiety, agitation, decreased appetite, tics, and rarely psychosis. Pemoline may also induce a chemical hepatitis thus requiring baseline and periodic hepatic profile.

Psychostimulants/ADD Medications - 2

Provigil (modafinil) is a 'selective' psychostimulant that works at the level of the hypothalamus. While it is a schedule IV drug as well, it appears to have little abuse potential. It is indicated by the FDA for narcolepsy but has off label applications in psychiatry for medication induced somnolence and may be useful as an adjunctive antidepressant agent.

Strattera (atomoxapine) released in 2003 is a Norepinephrine reuptake inhibitor. Usually given once per day with food. It may also be useful for antidepressant augmentation. The starting dose may be 18 mg to 25 mg. Its major side affect is possible nausea, no weight gain, and no abuse potential .

Abuse Deterrents

Disulfiram ***(Antabuse)***
Used only to sustain abstinence from alcohol.
May cause dangerous reactions if alcohol is consumed.
Naltrexone ***(ReVia, Vivitrol)***
Used to encourage abstinence from opiates and possibly alcohol.
Methadone
Useful for chronic opiate dependence to reduce craving and also to treat pain.
Controversial, as it is itself an opioid.
Bupropion ***(Wellbutrin, Zyban)***
An antidepressant also useful to reduce nicotine craving during smoking cessation (see above).

Eating Disorder Medications - 1

Antidepressants

Fluoxetine is best studied. It appears to reduce bingeing and purging behaviors in anorexics and bulimics during the short term.

Bupropion is also effective but carries a high risk of seizure in these patients and is therefore contraindicated.

Appetite Inducers

Tested agents include cyproheptadine (**Periactin**) and tetrahydrocannabinol (**Marinol**) which is the active ingredient in marijuana.

Unfortunately NOT particularly helpful in the treatment of anorexia.

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Eating Disorder Medications - 2

Appetite Suppressants

Commonly used agents include phentermine (**Lonamin, Fastin**) and sibutramine (**Meridia**) which work by neurotransmitter reuptake blockade in the brain .

Dexfenfluramine (**Redux**) and fenfluramine (**Pondimin**) were previously used but removed from the U.S. Market in 1997 after many patients developed cardiac valve abnormalities.

Xenical (Orlistat) - taken (3) times daily with meals to prevent digestion of dietary fats. Works by inactivating lipases produced by the pancreas. May exert its greatest benefits by psychologically modifying dieter's intake of fat calories. Some have dubbed this medication 'Antabuse for the Overweight'.

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ECT (Electroconvulsive Therapy)

This treatment is highly effective for depression, mania and catatonia. It has also been used to treat neuroleptic malignant syndrome (NMS). It is used only after patients have been sedated and is usually administered in courses of 6-12 treatments over several weeks. It is given unilaterally or bilaterally. There is controversy about which laterality is more effective. There can be side affects of short-term memory loss and anterograde amnesia. Headaches are a common side affect post treatment. There are no strict contraindications to its use and it is effective up to 80% of the time. It may be treatment of choice in the suicidally depressed and in the medically compromised.

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VNS (Vagal Nerve Stimulation)

- First and only FDA approved treatment (August 2005) for treatment-Resistant Depression (TRD)
- Works via afferent sensory fibers (CN X) to limbic brain structures to increase NE and 5-HT
- Minimal side effects with reasonable results in difficult patient population